

REMARKS

Claim 42 is amended. Claims 42-47 are in the application for consideration.

Independent claim 42 is amended to emphasize that the first isolation trench portion has a first depth and a first sidewall intersecting a surface of the semiconductor at a substrate angle other than 90°. Such is inherent from Applicant's application as-filed, for example where a preferred first angle other than 90° has been disclosed as being from about 30° to about 70°, all of such range being at some angle other than 90°. Accordingly, no new matter is added.

Independent claim 42 stands rejected as being obvious over a combination of U.S. Patent No. 6, 034,409 to Sakai et al. in view of U.S. Patent No. 6,355,540 to Wu. Yet, in the Examiner's remarks pertaining to the 35 U.S.C. §103 rejection, the Examiner refers to Jun. Regardless, the Sakai et al. reference specifically teaches against the combination of its respective teachings with either Jun or Wu. In light of Applicant's amended independent claim 42, reconsideration of this rejection is respectfully requested.

Specifically, each of Jun and Wu are interpreted to only expressly show or teach trenches having vertical sidewall portions where the trenches meet the surface of the semiconductor. Particularly, the trench of Wu et al. clearly starts out entirely vertical, normal, and at 90° relative to the outer surface of its material 2. Accordingly, such reference expressly teaches a 90° intersection with such surface, contrary to Applicant's independent

claim 42. Regarding Jun, it also clearly teaches only vertical, normal, and 90° intersecting of its allegedly equivalent first isolation trench portion with its surface of the semiconductor. Again, this is the opposite of what Applicant recites in independent claim 42.

Moreover and in particular, the vertical sidewall portions referred to above in Jun and Wu, represent the very feature taught again by Sakai et al. Specifically, at col.2, Ins.1-15, Sakai et al. clearly teaches that such a feature would undesirably cause an adverse electric field. Thus, persons of ordinary skill in the art, keeping in mind Sakai et al., would view either of the teachings of Jun or Wu as undesirably allowing for electrical field problems with their respective devices. Conversely, the artisan, keeping in mind Jun or Wu, would view Sakai et al. as requiring unnecessary cost and time in carrying out a complex trench isolation process. Such contrary teachings discourage one of ordinary skill in the art from attempting such a combination. (See, *In Re Young*, 927 F.2d 588, 18 U.S.P.Q.2d 1089 (Fed. Cir. 1991), indicating that when the prior art contains conflicting references, the inability of each reference to suggest solutions to one of ordinary skill in the art must be considered). Accordingly, the Examiner mischaracterizes the teachings of Jun, and apparently Wu, and Sakai et al. specifically teaches against utilizing the vertical/90° teachings of Jun and Wu. Thus, the Examiner has failed to meet the *prima facie* burden for rejection of Applicant's independent claim 42 as being obvious over a combination of Sakai et al. with either of Jun or Wu, or any established *prima facie* obviousness is overcome by the above argument, as the references teach

against the combination the Examiner makes. For at least this reason, the obviousness rejection of claim 42 over Sakai et al. in view of either Jun or Wu is in error and should be withdrawn. Action to that end is requested.

The various Examiner rejections over independent claim 42 only resulted from hindsight reconstruction utilizing Applicant's disclosure as a road map for the combination. There is a lack of suggestion or motivation to combine the references which the Examiner has combined. Specifically, the references cannot be combined where a reference in the combination teaches away from the combination. An Examiner cannot merely pick and choose from the desirable portions of the references to the exclusion of other teachings of the references. The references as a whole must be considered, and here, the applied references suggest against the combinations of either Jun or Wu with Sakai et al. Accordingly, independent claims 42 as presented herein is seen to be allowable.

Applicant's dependent claims should be allowed as depending from an allowable base claim, and for their own recited features which are neither shown nor suggested in the cited art. Action to that end is requested.

An earnest attempt has been made to place this application in immediate condition for allowance, and action to that end is requested

Respectfully submitted,

Dated: 7-14-04

By: 

Mark S. Matkin
Reg. No. 32,268